

Grain Receiving Baghouse

Operations Description

The DDGS receiving baghouse is a stationary filter that consists of an induced draft (ID) fan along with a reverse air system controlled by a pulsing system. The ID fan creates a vacuum which draws dust from 1 dump pit, 1 conveyor, and 1 leg. As the dust enters the baghouse it is drawn across the filters which separate the dust from the air. The resulting filtered air exits the baghouse travels through the ID fan then exits the system through the stack.

As the filters become coated with dust the reverse air system cleans the dust from the filters. The reverse air system blows compressed air backwards against the bags causing the dust to fall from the filter. This system uses a pulsing system which directs air to different sections of the baghouse to remove the dust. As the dust falls from the filters it accumulates in the bottom of the baghouse where it is conveyed back into the DDGS loadout conveyors and into the loadout system.

Effected Equipment:

- Y 5311
- BE 5315
- HP 5317
- Y 5320
- Truck loadout spout
- Rail loadout spout

Baghouse Operating Procedures

The DDGS baghouse is essential to operating the loadout system. The primary reason for its operation is safety. If dust is not drawn off the effected equipment and allowed to accumulate a dust explosion is possible. Dust suppression is also essential to OTAE's environmental compliance policies. Due to these factors at no time is it permitted to continue DDGS loadout operations if the grain receiving baghouse is shutdown. The DDGS baghouse must be in operation before any of the effected equipment can be energized.

Operating parameters

- All blast gates must be in their operating position
- Baghouse differential pressure must be between 1 inch to 6 inches W.C.
- Particulate emissions should not be present at anytime.
- All components of the baghouse must be in operation at all times.

Control Practices

The grain receiving baghouse is controlled by a local PLC. The local controls consist of level detection in the baghouse and also motion detection of the associated equipment. In the event the system experiences an alarm an alarm signal will be sent to the grain receiving distributed control system. (DCS) Depending on the severity of the alarm the unit will either continue to operate and allow the plant to continue loading. Or it will shut the system down and prohibit the facility to loadout DDGS.

Operator checks are also an integral part of the baghouse control. Operators will be making regular rounds in the area to ensure all equipment is functioning properly. Also operators will be obtaining differential pressure readings once per day while the unit is in operation. If the unit is outside of its 1" – 6" operating parameter the situation is to be reported immediately, and DDGS loading operations are to stop until the unit has returned to compliance. If visible emissions are detected the unit is to shut down and DDGS loading operations to stop immediately until the unit has been returned to normal operation.

Employee Training Program

OTAE's employee training program is based with on the job training with supplemental classroom training. All of OTAE's environmental policies are backed by the OTAE SOPs. SOPs are kept in the control room and are available to all employees.